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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,332	08/23/2006	Edouard Francois	PF040032	8332

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Jack Schwartz & Associates, PLLC
245 Fifth Avenue, Suite 1902
New York, NY 10016

EXAMINER

WILLIAMS, JEFFERY A

ART UNIT	PAPER NUMBER
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2488

NOTIFICATION DATE	DELIVERY MODE
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04/24/2012

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/590,332	Applicant(s) FRANCOIS ET AL.	
	Examiner JEFFERY WILLIAMS	Art Unit 2488	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-12 is/are pending in the application.
- 5a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Response to Arguments

1. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (US 2006/0008000) in view of Hallapuro et al. (US 7,349,473) and further in view of Pearlman et al. (Pearlman) (US 6,674,911).

Regarding **claims 1, 7, and 8**, Ye discloses Regarding claims 1, 4, and 7, Ye et al. discloses a decoding method of a picture sequence coded with spatial and temporal scalability (see pg. 1, [006], lines 44-49), the coded data comprising motion information (see pg. 1, [006], lines 44-49), comprising a hierarchical temporal synthesis step carrying out a motion compensated temporal filtering, or MCTF (see pg. 1, [006], lines 44-49) , of pictures at a frequency decomposition level, from the motion information, to provide pictures at a lower decomposition level (see pg. 1, [0012], lines 32-35), wherein the hierarchical temporal synthesis step comprises a motion estimation step using spatial interpolation filters ([0034] Ins. 6-8) and wherein, during a motion compensated temporal filtering operation, the resolution chosen for the use of the motion information

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([0040], [0042]) are controlled by a motion configuration choice circuit ([0034]; “In order to maximize the performance of the motion estimation and MCTF, independently optimized interpolation filters with a different tap can be used for each subband”) and depend on a decoding scenario, wherein the decoding scenario depends at least on a spatial resolution ([0040], [0042]) and a bit-rate selected for the decoding ([0040]; SNR scalability)

Ye is silent about the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario and a spatial synthesis step that is followed by a hierarchical temporal synthesis step.

Hallapuro et al. from the same or similar fields of endeavor teaches a method wherein the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario. Hallapuro states “The interpolation filter for use in conjunction with a multi-picture type is shorter or having fewer coefficients than the interpolation filter for use in conjunction with a single-picture type. As such, the complexity of the interpolation filter for the multi-picture type can be reduced. Furthermore, the interpolation filter may be changed based on the characteristics of the block, the size and/or the shape of the block” (see abstract and column 12, lines 11-20).

Pearlman from the same or similar field of endeavor discloses a spatial synthesis step (FIG. 10, (344)) that is followed by a hierarchical temporal synthesis step (FIG. 10, (346), FIG. 11)

Thus it would have been obvious to a person of ordinary skill in the art at the time of the invention to add selection of interpolation coefficients based on characteristics of the block, disclosed by Hallapuro et al., and to follow a spatial synthesis step with a hierarchical temporal synthesis step, disclosed by Pearlman, to the present invention disclosed by Ye et al., the motivation being, enhanced interpolation of the encoded data.

Regarding **claims 3, 6, and 11**, Ye et al. further discloses a method according to claim 1, wherein the hierarchical temporal synthesis step is a decoding of wavelet coefficients with motion compensated filtering (see Fig. 1, block 110 and Fig. 5, block 450), wherein the wavelet coefficients are obtained in said spatial synthesis step ([0005], [0007], [0028], [0029], [0042]).

Regarding **claim 4**, the limitations of claim 4 are rejected in the analysis of claim 1 and claim 4 is rejected upon that basis. Ye further discloses a hierarchical temporal analysis step (FIG. 10, (302), FIG. 11) and a subsequent spatial analysis step (FIG. 10, (304)).

For **claim 5**, Ye et al. further discloses the step of motion estimation computed between two pictures at a given level of decomposition to perform the motion compensation and wherein the operating conditions of the motion estimation comprise a computation accuracy ([0034], [0037], lines 31-37 and [0048]; “The interleaving process of the present invention enables the IBM-CTF method of the present invention to provide sub-pixel accuracy motion estimation and compensation”).

Regarding **claim 9**, the limitations of claim 9 are rejected in the analysis of claim 5, and claim 9 is rejected on that basis. The examiner notes that the computation accuracy of the motion estimation is determined by the MCTF circuits (130a-c) depicted in figure 1.

Regarding **claim 10**, the limitations of claim 10 are rejected in the analysis of claim 1, and claim 10 is rejected on that basis. While Ye discloses independently optimized interpolation filters with a different tap for each sub band ([0034]), Ye is silent about the number of coefficients used by the interpolation filter for motion compensation depends also on the temporal decomposition level.

Hallapuro et al. discloses an interpolation filter with a varying number of coefficients, as outlined above in the rejection of claim 1.

It would have been obvious to one of ordinary skill in the art to optimize the interpolation filters for each sub band, as taught by Kim, by varying the number of coefficients of the interpolation filter, as taught by Hallapuro, for more efficient motion compensation.

Regarding **claim 12**, Ye discloses the decoding scenario depends on the temporal decomposition level [0040].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)270-7579. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sath V. Perungavoor can be reached on (571)272-7455. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFERY WILLIAMS/
Examiner, Art Unit 2488

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/Sath V. Perungavoor/

Supervisory Patent Examiner, Art Unit 2488